

What is claimed is:

1 1. A broadcasting apparatus for broadcasting an interactive
2 program composed of a plurality of contents that are linked
3 to one another, the broadcasting apparatus comprising:
4 content storing means for storing the plurality of
5 contents, each content including a set of video data and a
6 set of control information that indicates another content
7 that is a link destination for a present content; and
8 transmitting means for multiplexing a set of video
9 data and a plurality of sets of the same control information
10 included in a same content as the set of video data, and for
11 transmitting the multiplexed sets of video data and control
12 information.

1 2. The broadcasting apparatus of Claim 1, wherein the
2 content storing means includes:
3 first storing means for storing the sets of video data
4 included in the plurality of contents;
5 second storing means for storing the sets of control
6 information included in the plurality of contents; and
7 construction table storing means for storing a
8 construction table showing correspondence between the sets
9 of video data stored in the first storing means and the sets
10 of control information stored in the second storing means.

1 3. The broadcasting apparatus of Claim 2, wherein the

2 transmitting means includes:

3 multiplexing means for reading the plurality of sets
4 of video data stored in the first storing means and the
5 plurality of sets of control information stored in the
6 second storing means as respective digital data streams, and
7 multiplexing the digital data streams to generate a
8 multiplexed stream;

9 multiplexing control means for referring to the
10 construction table and controlling the multiplexing means to
11 multiplex the plurality of sets of video data and to
12 repeatedly multiplex a set of control information
13 corresponding to a set of video data; and

14 broadcasting means for placing the multiplexed stream
15 generated by the multiplexing means onto a digital broadcast
16 wave and broadcasting the digital broadcast wave.

1 4. The broadcasting apparatus of Claim 3, wherein the
2 content storing means further includes:

3 third storing means for storing sets of audio data
4 that correspond to the sets of video data,

5 wherein the construction table storing means stores
6 correspondence between a set of video data, a set of audio
7 data, and a set of control information included in each of
8 the plurality of contents,

9 and wherein the multiplexing means also multiplexes
10 the sets of audio data stored in the third storing means

11 into the multiplexed stream.

1 5. The broadcasting apparatus of Claim 3,
2 wherein each content includes a plurality of sets of
3 control information, each set of control information
4 including a set of link information showing contents that
5 are link destinations and a set of time information
6 indicating a valid period for the present control
7 information within the reproduction period of the set of
8 video data corresponding to the present set of control
9 information,
10 and wherein the multiplexing control means controls
11 the multiplexing means to repeatedly multiplex each set of
12 control information with the corresponding set of video data
13 during the valid period of the set of control information.

1 6. The broadcasting apparatus of Claim 5,
2 wherein the multiplexing control means controls the
3 multiplexing means to repeatedly multiplex each set of
4 control information with the corresponding video data
5 starting from a predetermined time before the valid period
6 of the set of control information, the predetermined time
7 being sufficiently long to enable a reception apparatus to
8 process a set of control information.

1 7. The broadcasting apparatus of Claim 5, wherein the

2 multiplexing control means appends a version number,
3 reflecting the valid period of each set of control
4 information, to each set of control information in a given
5 content.

1 8. The broadcasting apparatus of Claim 3,

2 wherein each content includes a plurality of sets of
3 control information,

4 wherein the construction table storing means includes
5 a valid period table indicating a valid period for a set of
6 control information within the reproduction period of the
7 corresponding set of video data, for each of the plurality
8 of sets of control information included in a given content,

9 wherein the multiplexing control means controls the
10 multiplexing means to repeatedly multiplex a given set of
11 control information with the corresponding set of video data
12 during the valid period of the given set of control
13 information, based on the valid period table, and

14 wherein the multiplexing control means appends a
15 version number, reflecting the valid period of each set of
16 control information, to each set of control information in a
17 given content.

1 9. The broadcasting apparatus of Claim 3, wherein at least
2 one set of control information includes a set of additional
3 information representing one of text and a graphic image

4 that is to be displayed superimposed onto the corresponding
5 video data.

1 10. The broadcasting apparatus of Claim 3, wherein each set
2 of control information stored by the second storing means
3 includes a set of link information showing contents that are
4 link destinations and supplementary images representing menu
5 items for each link destination.

1 11. The broadcasting apparatus of Claim 10,
2 wherein at least one set of control information
3 includes:
4 a plurality of sets of additional information
5 representing one of text and a graphic image that is to be
6 displayed superimposed onto the corresponding video data;
7 and
8 a set of script information that validates one of the
9 sets of additional information within a reception apparatus,
10 in accordance with a user operation.

1 12. The broadcasting apparatus of Claim 10,
2 wherein at least one set of control information
3 includes:
4 at least two groups of a set of link information and
5 supplementary images;
6 a set of initial information showing a group of a set

7 of link information and supplementary images that is valid
8 at a start of reproduction by a reception apparatus for a
9 content including the present set of control information;
10 and

11 a set of script information that changes a valid
12 setting in the reception apparatus in accordance with a user
13 operation.

1 13. The broadcasting apparatus of Claim 12, wherein each
2 group of a set of link information and supplementary image
3 further includes a set of additional information
4 representing one of text and a graphic image that is to be
5 displayed superimposed onto the corresponding video data.

1 14. A broadcasting apparatus for broadcasting an interactive
2 program composed of a plurality of contents that are linked
3 to one another, the broadcasting apparatus comprising:

4 first storing means for storing a plurality of sets of
5 video data that each have an identifier, each set of video
6 data being an element of a content that composes an
7 interactive program;

8 second storing means for storing a plurality of sets
9 of control information that each have an identifier, each
10 set of control information being another element of a
11 content that composes an interactive program and each set of
12 control information including a set of link information that

13 shows an identifier of a set of control information for a
14 content that is a link destination;
15 construction table storing means for storing a
16 construction table showing correspondence between the sets
17 of video data stored in the first storing means and the sets
18 of control information stored in the second storing means;
19 multiplexing means for reading the plurality of sets
20 of video data stored in the first storing means and the
21 plurality of sets of control information stored in the
22 second storing means as respective digital data streams, and
23 for multiplexing the digital data streams to generate a
24 multiplexed stream;
25 multiplexing control means for referring to the
26 construction table and controlling the multiplexing means to
27 multiplex the plurality of sets of video data and to
28 repeatedly multiplex a set of control information
29 corresponding to an arbitrary set of video data; and
30 broadcasting means for placing the multiplexed stream
31 generated by the multiplexing means onto a digital broadcast
32 wave and broadcasting the digital broadcast wave.

1 15. The broadcasting apparatus of Claim 14, wherein the
2 multiplexing control means includes:

3 first determining means for determining a multiplexing
4 start position in the multiplexed stream for each set of
5 video data in each content given in the construction table;

6 and

7 second determining means for determining a plurality
8 of multiplexing start positions in the multiplexed stream
9 for each set of control information included in each content
10 given in the construction table, wherein the multiplexing
11 start positions for a given set of control information are
12 determined so that the given set of control information is
13 multiplexed a plurality of times;

14 wherein the multiplexing means reads the sets of video
15 data from the first storing means and the sets of control
16 information from the second storing means in accordance with
17 the multiplexing start positions determined by the first
18 determining means and the second determining means.

1 16. The broadcasting apparatus of Claim 15,

2 wherein each set of control information stored in the
3 second storing means includes a set of link information
4 showing contents that are link destinations and a set of
5 time information showing a valid period of the set of
6 control information to which the time information belongs,
7 and

8 wherein the second determining means determines the
9 plurality of multiplexing start positions for each set of
10 control information so that each set of control information
11 is repeatedly multiplexed during the valid period of the set
12 of control information.

1 17. The broadcasting apparatus of Claim 16, wherein the
2 multiplexing control means further includes:
3 version appending means for appending a different
4 version number to each of the plurality of sets of control
5 information included in a same content, the version numbers
6 being assigned in accordance with the valid period given in
7 the set of time information included in each set of control
8 information,
9 wherein the multiplexing means multiplexes the sets of
10 control information with the appended version numbers in
11 accordance with the multiplexing start positions determined
12 by the second determining means.

1 18. The broadcasting apparatus of Claim 16, wherein the
2 second determining means determines the multiplexing start
3 positions so that each set of control information is
4 multiplexed with the corresponding video data starting from
5 a predetermined time before the valid period of the set of
6 control information, the predetermined time being
7 sufficiently long to enable a reception apparatus to process
8 a set of control information.

1 19. The broadcasting apparatus of Claim 15, wherein the
2 multiplexing control means further includes:
3 system information storing means for storing system

4 information for specifying a multiplexed stream on a digital
5 broadcast wave, wherein the system information includes a
6 stream ID for each set of video data and a stream ID for
7 each set of control information;

8 identification information appending means for
9 converting an identifier of a set of video data and an
10 identifier of a set of control information respectively into
11 first identification information and second identification
12 information, based on the system information, for appending
13 the first identification information to the set of video
14 data, and for appending the second identification
15 information to the set of control information; and

16 link destination information converting means for
17 converting the link information in each set of control
18 information into the first identification information and
19 second identification information for the set of video data
20 and set of control information of each content that is a
21 link destination,

22 wherein the multiplexing means generates the
23 multiplexed stream using the system information, the first
24 identification information, and the second identification
25 information.

1 20. The broadcasting apparatus of Claim 19, wherein the
2 first identification information is expressed as a unique
3 stream ID for each set of video data and the second

4 identification information is expressed as a combination of
5 a stream ID that is common to all sets of control
6 information in a content and a unique parameter for each set
7 of control information in the content.

1 21. The broadcasting apparatus of Claim 20,
2 wherein each content includes a plurality of sets of
3 control information, each set of control information
4 including a set of link information showing contents that
5 are link destinations and a set of time information
6 indicating a valid period for the present control
7 information within the reproduction period of the set of
8 video data corresponding to the present set of control
9 information,
10 and wherein the multiplexing control means controls
11 the multiplexing means to repeatedly multiplex each set of
12 control information with the corresponding set of video data
13 during the valid period of the set of control information.

1 22. The broadcasting apparatus of Claim 20,
2 wherein each content includes a plurality of sets of
3 control information,
4 wherein the construction table storing means includes
5 a valid period table indicating a valid period for a set of
6 control information within the reproduction period of the
7 corresponding set of video data, for each of the plurality

8 of sets of control information included in a given content.
9 wherein the multiplexing control means controls the
10 multiplexing means to repeatedly multiplex a given set of
11 control information with the corresponding set of video data
12 during the valid period of the given set of control
13 information, based on the valid period table, and
14 wherein the multiplexing control means appends a
15 version number, reflecting the valid period of each set of
16 control information, to each set of control information in a
17 given content.

1 23. The broadcasting apparatus of Claim 21,
2 wherein the multiplexing control means controls the
3 multiplexing means to repeatedly multiplex each set of
4 control information with the corresponding video data
5 starting from a predetermined time before the valid period
6 of the set of control information, the predetermined time
7 being sufficiently long to enable a reception apparatus to
8 process a set of control information.

1 24. The broadcasting apparatus of Claim 21,
2 wherein the multiplexing control means appends a
3 version number, reflecting the valid period of each set of
4 control information, to each set of control information in a
5 given content.

1 25. The broadcasting apparatus of Claim 19, wherein each set
2 of control information stored by the second storing means
3 includes a set of link information showing contents that are
4 link destinations and supplementary images representing menu
5 items for each link destination.

1 26. The broadcasting apparatus of Claim 15, wherein the
2 multiplexing control means further includes:

3 a bandwidth assigning table that shows a bandwidth for
4 each content, the bandwidth being for the digital data
5 stream of the sets of control information in a content that
6 are repeatedly transmitted and being a bandwidth that is
7 part of a total bandwidth of the multiplexed stream,

8 wherein the second determining means determines the
9 multiplexing start positions of sets of control information
10 in accordance with the bandwidths given in the bandwidth
11 assigning table, and

12 wherein the multiplexing means multiplexes the digital
13 data streams in accordance with the bandwidth assigning
14 table.

1 27. The digital broadcasting apparatus of Claim 14, further
2 comprising:

3 third storing means for storing a plurality of sets of
4 audio data that each have an identifier, each set of audio
5 data being an element of a content that composes an

6 interactive program,
7 wherein the construction table shows a correspondence
8 between a set of video data, a set of audio data and sets of
9 control information in each content, and
10 wherein the multiplexing means additionally
11 multiplexes the audio data into the multiplexed stream.

1 28. A broadcasting apparatus for broadcasting an interactive
2 program composed of a plurality of contents that are linked
3 to one another, the broadcasting apparatus comprising:

4 image storing means storing a plurality of sets of
5 video data and a plurality of sets of still image data;

6 control information storing means for storing sets of
7 type 1 control information and sets of type 2 control
8 information, the sets of type 1 control information being
9 elements of contents including video images, the sets of
10 type 2 control information being elements of contents
11 including still images, and the sets of type 1 control
12 information and sets of type 2 control information including
13 sets of link information that indicate contents which are
14 link destinations for a present content;

15 construction table storing means storing a first
16 construction table showing correspondence between sets of
17 video data and sets of type 1 control information and a
18 second construction table showing correspondence between
19 sets of still image data and sets of type 2 control

20 information;

21 first multiplexing means for generating a first
22 multiplexed stream by multiplexing a set of video data in
23 the first construction table and repeatedly multiplexing a
24 set of type 1 control information corresponding to the set
25 of video data;

26 second multiplexing means for generating a second
27 multiplexed stream by repeatedly multiplexing a plurality of
28 sets of still image data in the second construction table
29 with a set of type 2 control information; and

30 broadcasting means for placing the multiplexed stream
31 generated by the multiplexing means onto a digital broadcast
32 wave and broadcasting the digital broadcast wave.

1 29. A reception apparatus for receiving a broadcast wave
2 including an interactive program composed of a plurality of
3 contents that are linked to one another, wherein the
4 broadcast wave includes a multiplexed stream into which
5 different sets of video data have been multiplexed with a
6 plurality of sets of control information showing a link to
7 another content, the sets of control information being
8 repeatedly multiplexed,

9 the reception apparatus comprising:

10 extracting means for extracting a set of video data
11 and a set of control information in a same content as the
12 set of video data;

13 storing means for storing the extracted set of control
14 information;
15 reproducing means for reproducing the extracted set of
16 video data and outputting an image signal;
17 operation means for receiving a user operation that
18 indicates a content switching; and
19 control means for controlling the extracting means to
20 extract another content indicated by the set of control
21 information stored in the storing means, in accordance with
22 the user operation.

1 30. The reception apparatus of Claim 29,
2 wherein the sets of control information each include
3 valid period information showing a valid period for the set
4 of control information,
5 wherein each content has to a plurality of sets of
6 control information which have different valid periods, and
7 wherein the reproducing means reproduces supplementary
8 images in the set of control information stored in the
9 storing means during the valid period of the set of control
10 information.

1 31. The reception apparatus of Claim 29,
2 wherein each content corresponds to a plurality of
3 sets of control information which have different valid
4 periods,

5 wherein each set of control information has a version
6 number which reflects the valid period, and
7 wherein the control means controls the extracting
8 means to extract a set of control information which has a
9 next version number, when one set of control information has
10 been extracted by the extracting means.

1 32. The reception apparatus of Claim 29,
2 wherein first identification information is appended
3 to each set of video data and second identification
4 information is appended to each set of control information,
5 and wherein the sets of control information include first
6 identification information and second identification
7 information which express a content of a link destination,
8 wherein the extracting means includes:
9 first judging means for judging the first
10 identification information appended to sets of video data in
11 the broadcast wave;
12 second judging means for judging the second
13 identification information appended to sets of control
14 information in the broadcast wave;
15 obtaining means for obtaining a set of video data and
16 when the first judging means judges that the first
17 identification information coincides with specified
18 identification information indicated by the control means
19 and obtaining a set of control information when the second

20 judging means judges that the second identification
21 information coincides with specified identification
22 information,
23 wherein the reproducing means reproduces the set of
24 video data obtained by the obtaining means, and the storing
25 means stores the set of control information obtained by the
26 obtaining means.

1 33. The reception apparatus of Claim 32,
2 wherein a set of entry information giving first
3 identification information and second identification
4 information for the content to be reproduced first is
5 multiplexed into the multiplexed stream,
6 wherein the control means sends an indication to the
7 extracting means to extract the set of entry information
8 when the operation means has received a selection operation
9 for a multiplexed stream from a user,
10 wherein the extracting means further includes:
11 entry information extracting means for receiving the
12 indication from the control means and extracting the set of
13 entry information from the multiplexed stream; and
14 entry information storing means for storing the set of
15 entry information extracted by the entry information
16 extracting means,
17 wherein the control means gives the obtaining means an
18 indication of the first identification information and

19 second identification information included in the entry
20 information as the specified identification information.

1 34. The reception apparatus of Claim 32,
2 wherein the link information includes an identifier of
3 a set of video data and an identifier of a set of control
4 information which show a content of a link destination,
5 wherein the first identification information and
6 second identification information are IDs (identifiers) of
7 digital data streams which represent a set of video data and
8 a set of control information in the multiplexed stream,
9 wherein a correspondence table, showing correspondence
10 between the identifiers for sets of video data and the first
11 identification information and correspondence between the
12 identifiers for sets of control information and the second
13 identification information, is multiplexed into the
14 multiplexed stream and repeatedly transmitted, and
15 wherein the extracting means extracts the
16 correspondence table and the control means refers to the
17 correspondence table, converts an identifier of the set of
18 video data included in the link information into first
19 identification information and an identifier of the set of
20 control information into second identification information
21 and informs the extracting means of the converted first and
22 second identification information.

1 35. The reception apparatus of Claim 32,
2 wherein at least one set of control information
3 includes link information showing a content of a link
4 destination and supplementary images that include a menu
5 item image for each link destination,
6 wherein the reproducing means includes:
7 video data reproducing means for reproducing the set
8 of video data obtained by the obtaining means; and
9 image reproducing means for reproducing supplementary
10 images stored by the storing means superimposed onto the
11 video data,
12 wherein the operation means receives a user selection
13 of a menu item image, and
14 wherein the control means determines the first
15 identification information and the second identification
16 information of a link destination content in accordance with
17 the link information and the menu item image selected by the
18 user.

1 36. The reception apparatus of Claim 35,
2 wherein at least one set of control information
3 includes additional information which expresses one of a
4 text image and a graphics image, and wherein the reproducing
5 means additionally reproduces one of the text image and
6 graphics image stored in the storing means superimposed onto
7 the video data.

8 37. The reception apparatus of Claim 36,
9 wherein one content has a plurality of sets of control
10 information which each have a different valid period,
11 wherein each set of control information in a same
12 content has a version number which reflects a valid period
13 of the set of control information, and
14 wherein when the extracting means has extracted a set
15 of control information, the control means controls the
16 extracting means to extract a set of control information
17 that has a next version number.

1 38. The reception apparatus of Claim 36,
2 wherein each set of control information includes valid
3 period information showing a valid period of the set of
4 control information,
5 wherein each content has a plurality of sets of
6 control information which have different valid periods,
7 and wherein the reproducing means reproduces
8 supplementary images stored in the storing means only during
9 a valid period of the set of control information stored in
10 the storing means.

1 39. The reception apparatus of Claim 38,
2 wherein each of the plurality of sets of control
3 information for a same content has a version number that
4 reflects the valid period, and wherein the control means

5 controls the extracting means to extract a set of control
6 information which has a next version number, when one set of
7 control information has been extracted by the extracting
8 means.

1 40. The reception apparatus of Claim 36,
2 wherein at least one set of control information
3 includes a plurality of sets of additional information which
4 each express one of a text image and a graphics image to be
5 displayed superimposed onto the video data, and a set of
6 script information that validates one of the sets of
7 additional information within a reception apparatus, in
8 accordance with a user operation,
9 wherein the control means determines a valid set of
10 additional information by interpreting and executing the
11 script information stored in the storing means, and
12 wherein the reproducing means reproduces one of the
13 text image and the graphics image included in the valid set
14 of additional information based on a result of interpreting
15 and executing by the control means.

1 41. The reception apparatus of Claim 36,
2 wherein at least one set of control information
3 includes: at least two groups that each include a set of
4 link information and a supplementary image; a set of initial
5 information showing a valid group at a start of reproduction

6 by the reception apparatus of a content to which the set of
7 control information belongs; and a set of script information
8 which changes a setting of a valid group in the reception
9 apparatus in accordance with a user operation,

10 wherein the control means determines a valid group by
11 interpreting and executing the initial information and
12 script information stored in the storing means,

13 wherein the reproducing means reproduces the
14 supplementary images in the valid group in accordance with
15 an interpreting and executing result of the control means.

1 42. The reception apparatus of Claim 29,

2 wherein the multiplexed stream includes sets of audio
3 data corresponding to the sets of video data,

4 wherein the extracting means extracts a set of audio
5 data corresponding to a set of video data from the broadcast
6 wave,

7 and wherein the reproducing means additionally
8 reproduces the extracted set of audio data.

1 43. A reception apparatus for receiving a broadcast wave
2 including an interactive program composed of a plurality of
3 contents that are linked to one another,

4 wherein the broadcast wave includes a multiplexed
5 stream into which different sets of video data have been
6 multiplexed with a plurality of sets of control information

7 showing a link to another content, the sets of control
8 information being repeatedly multiplexed,
9 wherein first identification information is appended
10 to each set of video data and second identification
11 information is appended to each set of control information,
12 wherein the sets of control information include first
13 identification information and second identification
14 information which express a content of a link destination,
15 the reception apparatus comprising:
16 extracting means for extracting a set of video data
17 and a set of control information in a same content as the
18 set of video data;
19 storing means for storing the extracted set of control
20 information;
21 reproducing means for reproducing the extracted set of
22 video data and outputting an image signal;
23 operation means for receiving a user operation that
24 indicates a content switching; and
25 control means for controlling the extracting means to
26 extract another content indicated by the set of control
27 information stored in the storing means, in accordance with
28 the user operation,
29 the extracting means including:
30 first judging means for judging the first
31 identification information appended to sets of video data in
32 the broadcast wave;

33 second judging means for judging the second
34 identification information appended to sets of control
35 information in the broadcast wave; and
36 obtaining means for obtaining a set of video data and
37 when the first judging means judges that the first
38 identification information coincides with specified
39 identification information indicated by the control means
40 and obtaining a set of control information when the second
41 judging means judges that the second identification
42 information coincides with specified identification
43 information,
44 wherein the reproducing means reproduces the set of
45 video data obtained by the obtaining means, and the storing
46 means stores the set of control information obtained by the
47 obtaining means.

1 44. The reception apparatus of Claim 43,
2 wherein the link information includes an identifier of
3 a set of video data and an identifier of a set of control
4 information which show a content of a link destination,
5 wherein the second identification information is an
6 identifier for a set of control information,
7 wherein a correspondence table, showing correspondence
8 between the identifiers for sets of video data and the first
9 identification information and correspondence between the
10 identifiers for sets of control information and the second

11 identification information, is multiplexed into the
12 multiplexed stream and transmitted,
13 wherein the extracting means extracts the
14 correspondence table, and
15 wherein the control means refers to the extracted
16 correspondence table, converts the identifier of the set of
17 video data included in the link information into first
18 identification information, and informs the extracting
19 means.

1 45. The reception apparatus of Claim 44, wherein the first
2 identification information includes a packet identifier in
3 accordance with MPEG2 (Moving Pictures Experts Group 2)
4 standard.

1 46. The reception apparatus of Claim 44, wherein the first
2 identification information is a combination of a packet
3 identifier in accordance with MPEG2 (Moving Pictures Experts
4 Group 2) standard and another parameter.

1 47. A reception apparatus in a broadcasting system for
2 achieving interactiveness using a broadcast wave,
3 wherein the broadcast wave includes a first
4 multiplexed stream which represents a plurality of stream-
5 based contents that each include a set of video data and a
6 set of type 1 control information, and a second multiplexed

7 stream which represents a plurality of page-based contents
8 that each include a set of still image data and a set of
9 type 2 control information,
10 the first multiplexed stream having the sets of type 1
11 control information that show a link to another content
12 repeatedly multiplexed with the corresponding sets of video
13 data,
14 the second multiplexed stream having a plurality of
15 sets of still image data and a plurality of sets of type 2
16 control information repeatedly multiplexed,
17 the reception apparatus comprising:
18 extracting means for extracting one of a set of video
19 data and a set of still image data, and one of a set of type
20 1 control information and a set of type 2 control
21 information in a same content from the broadcast wave;
22 storing means for storing an extracted set of one of
23 type 1 control information and type 2 control information;
24 judging means for judging whether a content extracted
25 by the extracting means is one of a stream-based content and
26 a page-based content;
27 reproducing means for reproducing, when the judging
28 means judges that the judging means is a stream-based
29 content, the extracted set of video data and outputting an
30 image signal, and for reproducing, when the judging means
31 judges that the judging means is a page-based content, the
32 extracted set of still image data and outputting an image

33 signal;
34 operation means for receiving a user operation that
35 indicates a content switching; and
36 control means for controlling the extracting means to
37 extract another content indicated by the set of control
38 information stored in the storing means, in accordance with
39 the user operation.

1 48. A broadcasting system which includes a broadcasting
2 apparatus and a reception apparatus and which achieves
3 interactiveness using a broadcast wave,
4 the broadcasting apparatus comprising:
5 content storing means for storing the plurality of
6 contents, each content including a set of video data and a
7 set of control information that indicates another content
8 that is a link destination for a present content; and
9 transmitting means for multiplexing a set of video
10 data and a plurality of sets of the same control information
11 included in a same content as the set of video data, and for
12 transmitting the multiplexed sets of video data and control
13 information,
14 and the reception apparatus comprising:
15 extracting means for extracting a set of video data
16 and a set of control information in a same content as the
17 set of video data;
18 storing means for storing the extracted set of control

19 information;
20 reproducing means for reproducing the extracted set of
21 video data and outputting an image signal;
22 operation means for receiving a user operation that
23 indicates a content switching; and
24 control means for controlling the extracting means to
25 extract another content indicated by the set of control
26 information stored in the storing means, in accordance with
27 the user operation.

1 49. A recording medium used by a reception apparatus that
2 includes a receiving unit for receiving a broadcast wave
3 including an interactive program composed of a plurality of
4 contents that are linked to one another, an extracting unit
5 for extracting one digital data stream from the broadcast
6 wave, and a reproducing unit for reproducing a set of video
7 data and outputting an image signal, the recording medium
8 storing a program that includes the following steps:
9 an extracting step for extracting a set of video data
10 and a set of control information in a same content as the
11 set of video data from the broadcast wave;
12 a storing step for storing the extracted set of
13 control information into a memory in the reception
14 apparatus;
15 a reproducing step for reproducing the extracted set
16 of video data and outputting an image signal;

17 a judging step for judging whether a user operation
18 indicating a switching of content has been made; and
19 a control step for controlling the extracting unit to
20 extract another content indicated by the set of control
21 information stored in the memory, when the judging step
22 judges that a user operation indicating a switching of
23 content has been made.